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10/753,327	01/09/2004	Helmut Preisach	Q78982	7254

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

DSOUZA, JOSEPH FRANCIS A

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/753,327

Applicant(s)

PREISACH, HELMUT

Examiner

Adolf DSouza

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/24/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it uses the word "means".

Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities:
 - In the specification (page 3, section "Detailed Description", 1st paragraph, line 3) "output or the CDR" should be corrected to "output of the CDR".
 - In the specification (page 4, line 3) "shall no be discussed" should be corrected to "shall not be discussed".
 - In the specification (page 5, 2nd last paragraph; page 6, 2nd and 3rd paragraphs) "ration" should be corrected to "ratio".

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- In the specification (page 6, last paragraph – page 7, 1st paragraph) Fig. 5a, 5b, 5c should be corrected to Fig. 4a, 4b, 4c.
- In the specification (page 7, 2nd paragraph) Figure 6 should be corrected to Figure 5.
- In the specification (page 7, 3rd paragraph) “analogous” should be corrected to “analog”.

Appropriate correction is required.

Claim Objections

3. Claims 3, 7 – 9 are objected to because of the following informalities:

- In claim 3, “delimiter” should be changed to “decision circuit” or “comparator” since that is what is used in the specification (page 3, middle paragraph).
- In claims 7 and 8, “ration” should be changed to “ratio”.
- In claim 9, “comprise an equalize” should be changed to “comprise an equalizer”.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 3, 12 – 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Alexander et al. (US 6,233,077).

Regarding claim 1, Alexander discloses an electrical signal regenerator (Abstract; column 1, lines 20 – 24; wherein the electrical signal regenerator is the remodulator that receives a signal and places it onto another channel) comprising:

an equalizer and a clock data recovery circuit and a switch (Fig. 2, filter 33, clock/data recovery 43, switch 41; column 5, lines 6 – 19; wherein the equalization function is performed by the wave shaping filter 33);

said switch being operable to either connect the data recovery circuit to the output when an input signal of a higher bit rate multiplex signal is detected or to bypass the data recovery circuit and connect the equalizer to the output when an input signal of a lower bit rate multiplex signal is detected (Fig. 2, filter 33, clock/data recovery 43, switch 41; column 5, lines 6 – 19; wherein for the higher bit rate signal, the switch selects the clock recovery and for lower bit rates it selects the filter 33).

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Regarding claim 2, Alexander discloses the clock data recovery circuit comprises a detector for detecting the bit rate of the input signal (column 5, lines 14 – 16; wherein the detection of high bit rates signals is done by the switch 41).

Regarding claim 3, Alexander discloses a delimiter for deciding upon logical signal value 0 or 1 (Fig. 2, element 34; column 5, lines 9 – 12; wherein the delimiter is interpreted as the limiting amplifier which limits the signal to an upper or lower level before feeding the output to the FEC 45).

Regarding claim 12, Alexander discloses a method of transmitting an electrical signal having either a first or a second bit rate wherein the first bit rate is higher than the second bit rate (column 5, lines 5 – 19; column 8, lines 28 – 38; wherein the first and second bit rates are obtained by matching the data rate of the incoming signal);

said method comprising the steps of transmitting said electrical signal via a signal path (Fig. 1, elements 22 output transmitted to element 30; Fig. 2, input signal “transmitted optical signal” obtained from Fig. 1 element 22);

detecting the bit rate of said electrical signal received from the signal path (column 5, lines 14 – 16; wherein the detection of high bit rates signals is done by the switch 41);

in the case the electrical signal has the first bit rate, performing a first regeneration of said electrical signal and then performing a second regeneration and in the case the signal has the second bit rate, performing said first regeneration of said signal, only (Fig. 2, filter 33, clock/data recovery 43, switch 41; column 5, lines 6 – 19; wherein for

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the first bit rate signal, the switch selects the clock recovery and for second bit rate it selects the filter 33 and the first regeneration is interpreted as the clock recovery and the regeneration is interpreted as the filtering done by filter 33).

Regarding claim 13, Alexander discloses first signal regeneration is an electrical equalization (Fig. 2, element 33; column 5, lines 5 – 18; wherein the equalization is done by filter 33) and wherein said second signal regeneration is a clock data recovery (Fig. 2, element 43; column 5, lines 12 – 14).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,233,077) in view of Carriere (US 5,504,778).

Regarding claim 4, Alexander does not disclose a test loop from output to input.

In the same field of endeavor, however, Carriere discloses a test loop controllably connectable from the output to the input of the regenerator (column 11, lines 13 – 18, 26 – 34; wherein the test loop feeds the signal from the output to the input).

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Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Carriere, in the system of Alexander because this would allow a loop test to be performed, as is well known in the art.

8. Claim 5 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,233,077) in view of Roberts (US 6,067,180).

Regarding claim 5, Alexander does not disclose that the analog equalizer is a tapped delay line.

In the same field of endeavor, however, Roberts discloses equalizer being an analogue equalizer comprising a tapped delay line (Fig. 6; column 3, lines 10 – 11, 17 - 31).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Roberts, in the system of Alexander because this would provide a means for equalization of the received signal, as is well known in the art.

Regarding claim 6, Alexander does not disclose the equalizer has a first and second tap, with the first tap having a higher delay than the second tap and the two signals being connected to an adder/subtractor.

In the same field of endeavor, however, Roberts discloses the analogue equalizer comprising a first tap and a second tap, the first tap having a higher delay than the

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second tap, both taps being connected to a adder-subtractor for generating a difference signal (column 3, lines 17 - 31; Fig. 6; wherein the analog equalizer is the one used in the optical domain).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Roberts, in the system of Alexander because this would provide a means for equalization of the received signal, as is well known in the art.

Regarding claim 7, Alexander does not disclose the signal ratio between the two taps is adjustable.

In the same field of endeavor, however, Roberts discloses the signal ratio between the two taps is adjustable (column 3, lines 17 – 31; wherein the adjustable taps is the filter weights that are controlled to provide an adaptive equalizer).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Roberts, in the system of Alexander because this would provide a means for equalization of the received signal, as is well known in the art.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,233,077) in view of Roberts (US 6,067,180) and further in view of Townsend et al. (US 5,323,423).

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Regarding claim 8, the combined invention of Alexander and Roberts does not disclose that peak detectors determine the ratio.

In the same field of endeavor, however, Townsend discloses the signal ratio between the two taps is adjustable, and wherein the ratio is determined by two peak detectors (Fig. 2, elements 20a, 20b, 24; column 2, lines 14 – 58; wherein the equalizer is the variable filters 20a and 20b and the peak detectors [lines 41 – 46] are used to determine the pulse width adjustment that in turn is used to adjust the variable filter parameters).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Townsend, in the system of Alexander because this would allow the equalizer parameters to be adjusted based on a measure of the distortion in the signal present, in Townsend's case the measure being the pulse width value).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,233,077) in view of Feustel et al. (US 5,552,962).

Regarding claim 9, Alexander discloses a signal regenerator (Abstract; column 1, lines 20 – 24; wherein the electrical signal regenerator is the remodulator that receives a signal and places it onto another channel) comprising an equalizer and a clock data recovery circuit and a switch (Fig. 2, filter 33, clock/data recovery 43, switch 41; column 5, lines 6 – 19; wherein the equalization function is performed by the wave shaping filter 33), said switch being operable to either connect the data recovery circuit to an output

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when an input signal of a higher bit rate multiplex signal is detected or to bypass the data recovery circuit and connect the equalizer to the output when an input signal of a lower bit rate multiplex signal is detected (Fig. 2, filter 33, clock/data recovery 43, switch 41; column 5, lines 6 – 19; wherein for the higher bit rate signal, the switch selects the clock recovery and for lower bit rates it selects the filter 33).

Alexander does not disclose a network element comprising internal signal paths terminated by an electrical signal generator.

In the same field of endeavor, however, Feustel discloses a network element (Fig. 6, elements 60, 61; column 3, lines 31 - 38) comprising internal electrical signal paths (column 1, lines 22 - 32), wherein at least part of said paths are terminated by an electrical signal regenerator (column 1, lines 22 – 32).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Feustel, in the system of Alexander because this would allow regeneration of signals that are distorted by the transmission channel, as is well known in the art.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,233,077) in view of Feustel et al. (US 5,552,962 and further in view of Boulais et al. (US 20030002498).

Regarding claim 10, the combined invention of Alexander and Feustel does not disclose a switching matrix comprising switch modules connected by cables and regenerator.

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In the same field of endeavor, however, Boulais discloses an optical cross connect comprising an electrical space switching matrix, said matrix comprising a number of switch modules (page 1, paragraphs 2 – 4, 8) being interconnected by means of internal electrical cables (page 2, paragraphs 23), an electrical signal regenerator is coupled to one end of each internal electrical cable in front of a switching module (Fig. 3, element 38; which is the regenerator connected before the TX module which passes the data onto the various transmission lines).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Boulais, in the combined system of Alexander and Feustel because this would enable communication of signals in a optical network.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (US 6,233,077) in view of Feustel et al. (US 5,552,962 and further in view of Boulais et al. (US 20030002498), Zwan et al. (US 5,991,270) and Yeates (US 5,278,404).

Regarding claim 11, the combined invention of Alexander, Feustel and Boulais does not disclose a test signal at each output port and that the regenerators raise an alarm when a valid input signal is not valid.

In the same field of endeavor, however, Zwan discloses matrix modules being adapted to output a test signal at each unused output port (column 12, line 46 – column 13, line 34).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Zwan, in the combined system of Alexander, Feustel and Boulais because this would test procedures to be conducted, as is well known in the art.

In the same field of endeavor, however, Yeates discloses the electrical signal regenerators are adapted to raise an alarm when neither a test signal nor a valid input signal is detected (column 2, lines 46 – 49; Fig. 2, element 44; column 3, line 47 – column 4, line 15; wherein the absence of a valid input or test signal is interpreted as a loss transmission).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Yeates, in the combined system of Alexander, Feustel and Boulais because this would allow one to know that there is a loss of input signal, as disclosed by Yeates.

Other Prior Art Cited

13. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

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The following patents are cited to further show the state of the art with respect to regeneration, equalization and clock recovery:

Maione et al. (US 4,019,048) discloses Regenerator for an optical transmission system.

Russer et al. (US 4,060,739) discloses circuit arrangement for amplifying pulsed signals.

Bowen (US 4,498,167) discloses a TDM Communication system that uses regeneration and clock recovery.

Bickers (US 4,761,797) discloses a Flexible regenerator.

Mantovani (US 4,839,905) discloses a Multirate automatic equalizer.

Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolf DSouza whose telephone number is 571-272-1043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

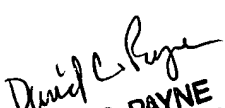
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AD

Adolf DSouza
Examiner
Art Unit 2611



DAVID C. PAYNE
PRIMARY PATENT EXAMINER